



by Wade H. Shaw, Jr.,
President EMS

“I challenge each of you to participate in at least one EMS activity or project in the next two years. We need and value your participation in chapters, education, publications, conferences, and membership!”

The Challenge

In my last article I shared how the EMS would be presenting a 5-year society review to the Technical Activities Board. We accomplished this task in New Orleans in February and learned a great deal from the process. Although the final reports from the review committee have not been received, we made a very strong presentation that left no doubts about the health and future of our society. The future for EMS looks bright indeed!

I'd like to share with you the challenge that I gave to the Board of Governors at our Spring 2000 meeting. The process of preparing the society review gave me a chance to reflect on the progress we have made in the last 5 years that helped me focus on the things that I think we must do to in the next 5 years. Specifically, I issued four challenges to our Board that I think we should do in the next 2-3 years. Certainly these are not the only things that we will be involved in but these challenges can help us shape the strategy and the initiatives that we choose to pursue.

First, we should increase our membership to 10,000. Currently we have around 7,500 members so this is a major challenge. Our field of interest is modern and represents the reality of engineering practice where engineers contribute to the business success of their employers. The majority of engineers will take on the responsibilities of management at some point in their careers. The EMS is the largest professional organization in the world for engineering/technology management and we can continue to grow as we reach out to students, engineers beginning their practice, mid-level engineering managers, and executive level decision-makers. We have to think globally as the EMS takes on a very transnational influence.

Second, we should increase our financial reserves to \$750K in the next two years. Right now our solid fiscal policies and investments have yielded an approximate \$680K of financial resources. We can meet this new challenge. We must continue to prove to ourselves that we can take on ambitious projects and still maintain our financial health. A strong financial base enables us to look to the future with confidence. Our financial performance is critical as we grow our membership, continue our education and publication efforts, and take advantage of new opportunities to serve our members.

Third, we should get our annual conference up to at least 200 attendees in the next two years. Our conferences are steadily improving in quality and value and we can move them to the next level. Already, our IEMC'2000 is shaping up to be an outstanding conference that may surpass this challenge in the first year! The key to meeting this challenge is to perfect the processes that identify conference themes, plan the conference, and execute the details. This is no easy task but we have leaders in place who can help us meet this challenge. Our conference is a very visible indicator of our contribution to society and our Board of Governors is pursuing a 3-5 year planning calendar to deliver conferences that you don't want to miss.

Fourth, we should get the review time for papers accepted into our Transactions to fewer than 18 months. The Transactions on Engineering Management is one of the most highly regarded journals in the field of engineering/technology management. With this success comes the challenge of processing an ever increasing volume of intellectual work. We must keep up the pace to deliver high quality research to the

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The Challenge

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“The way forward is paradoxically to look not ahead, but to look around.”

— From *The Social Life of Information*

technical and management communities that we serve in an efficient and timely manner. The time to get an article from receipt to print is a key metric that we monitor. Part of the delay is the backlog of papers waiting for space in the Transactions – we have significantly raised our page counts in 2000 and 2001 to address this issue. Another part of the delay is the review process itself and we are working to improve this process in the next two years to significantly reduce the review time.

These are challenges that I believe underlie the core processes that provide value to members. For sure, there are many other activities like member relations, education, and chapter support that are also critical and continue to be addressed. I offer these

specific challenges to motivate our planning process. We began a one-year strategic planning process in March to determine the best approach to meet these challenges. The Board of Governors will be working together in the next six months to think through our strengths and opportunities. I'll share the results of this process, as it becomes available.

There is one more challenge that I have to offer. I challenge each of you to participate in at least one EMS activity or project in the next two years. We need and value your participation in chapters, education, publications, conferences, and membership! I challenge you to be an active part of the EMS in the next two years — if you do, we will meet the other challenges!

Ferdinand Schor, 1906–2000

Former Chief Engineer of the Hallicrafters Company, Ferdinand Schor, died in Santa Barbara, California on January 14, 2000, at the age of 94.

Schor was a life member of the IEEE and, along with Ralph Cole, Co-founded the Engineering Management Society. He obtained his Masters in Electronic Engineering from the University of Southern California and was licensed as a radio amateur using the call letters K6HPB.

During World War II and the years following Schor was responsible for the de-

sign of many of the Hallicrafters products and receivers including the S-40, SX-42, and SX-62. In 1953 he moved from Chicago to La Canada, California with his family where he worked for the Jet Propulsion Laboratory in Pasadena and the Hoffman Corporation. He held 18 patents for electronic inventions.

He is survived by his three children, Warren Schor, Kathleen Schor Cummings, and Dr. Mary Secord Schor. His wife Lillian Mathias Schor predeceased him.

“The leader is the evangelist for the dream.”

— Dave Patterson,
Apple Computer

Congratulations to New Senior Members

The EMS Board of Governors congratulates and sends its best wishes to the Engineering Management Society's newly appointed Senior Members.

Issachar S. Gerlitz
Jerusalem, Israel

Kenneth Henriksen
Louisburg, Kansas

Valorie J. King
Bowie, Maryland

Anthony S Ruocco
West Point, New York

Official Notice

Official Publication of Changes to Amend the Engineering Society Constitution and Bylaws

by Tom Grim, EMS Secretary

At its December 1999 meeting, the EMS Board of Governors approved two sets of changes to the EMS Constitution and Bylaws. These changes are the first since the 1991 rewrite of the two documents. The full text of both documents is available on the EMS web page. [<http://www.ewh.ieee.org/soc/ems>]

The EMS BOG, the IEEE Technical Activities Board (TAB), and the IEEE Board of Directors must approve changes to the Constitution. The change listed below is an administrative change, which can be approved by the TAB Chairman. After that approval, the change must be published or mailed to the membership with a notice that it goes into effect unless ten per cent of the Society members object within 90 days. If ten per cent of the members object, there is a procedure for a mail ballot of the whole membership.

The BOG has approved two changes. The first adds a Bylaw providing for an Executive Committee with limited powers. The EMS Executive Committee is similar to those of several other societies that have them, and is tasked with a planning and oversight function. The business of the Society will continue to require Board of Governors involvement and approval.

The second change involves both the Constitution and Bylaws and resolves a conflict between the two documents. The recommended change assures that the current Board of Governors elects the officers in EMS.

The previous process for electing the officers called for the newly elected BOG members to vote on the officers for the next year when they would be serving. This arrangement was originally intended to enable the new members and encourage their attendance at the Fall BOG meeting after they were elected. However, a member of the BOG objected that allowing newly elected members to

vote was inappropriate because they would not become members of the BOG until the beginning of the first calendar year of their term of office. Because this process was embedded in the Constitution, it involved changes there as well as in the implementing Bylaw.

The following statements are extracted from the minutes of the December 1999 Board of Governors meeting. Objections to either the Constitutional or the Bylaws amendment should be directed to the EMS Secretary, Tom Grim, at t.grim@ieee.org, or faxed to him at +1 512 372 5891. Please provide your IEEE member number on any objections, to allow confirmation of membership.

Bylaws and Constitution Changes

The following Bylaw and Constitution changes were properly approved with no dissenting votes. Deleted text is struck through, and new text is underscored.

Executive Committee

Bylaws

3.9 An Executive Committee, chaired by the President, is concerned with the day-to-day affairs of the Society. Particular duties are tracking of finances, development of the agenda for Board of Governors meetings, review of the operations of the Committees, and strategic planning. In addition to the President, the Executive Committee Members shall be the Immediate Past President, the Executive Vice President, the Vice President Conferences, the Vice President Education, the Vice President Member Relations, the Vice President Publications, the Vice President Recognition and External Affairs, the Secretary, and the Treasurer.

Election of Officers

Constitution

Article V

Administration

Section 4. The current Board of Governors ~~for any particular calendar~~

~~year shall, prior to the beginning of that calendar year,~~ shall elect from its membership ~~or from the membership of the Board of Governors of the preceding year,~~ the following officers of the Society: a President, and at least two Vice Presidents, as specified by the Society Bylaws. The term of office for each shall be one year and shall coincide with the calendar year. The President shall appoint a Secretary and a Treasurer, each for a term of one year. The Secretary and the Treasurer need not be members of the Board of Governors at the time of their appointment. A single individual may serve as Secretary-Treasurer at the discretion of the President. The President may not be elected for more than two consecutive terms.

Bylaws

5. OFFICERS: Following the election of the incoming Board of Governors, but no later than September 1st, The Chair of the Nominating Committee shall submit to the Society President nominations for President, Executive Vice President, and five Vice Presidents for the ensuing term. The Vice Presidents shall be the Vice President Conferences, the Vice President Education, the Vice President Member Relations, the Vice President Publications, and the Vice President Recognition and External Relations. The Board of Governors shall elect the officers ~~immediately thereafter~~ by mail ballot ~~to the current and incoming Board~~ or in a meeting of the ~~incoming and~~ current Board assembled. The Society Secretary shall certify the results of the election prior to October 31.

Changes to the Bylaws require a two-thirds vote of the BOG after an advance notice requirement has been met. The Bylaw takes effect after it is published in appropriate EMS publications, filed with the Secretary of the Technical Activities Board, and approved by the General Manager of the IEEE.

Candidates for 2000 IEEE Division VI Director

Each of the four candidates for 2000 IEEE Division VI Director, an elected position on the IEEE Board of Directors, was invited to submit a statement for publication in the IEEE Engineering Management Society Newsletter about their candidacy. The candidates were asked to omit biographical details that are available elsewhere from their statements. The candidates, in alphabetical order, are: Loretta Arellano, past president of the IEEE Reliability Society, Gerard H. (Gus) Gaynor, past president of the IEEE Engineering Management Society, Kenneth Foster, past president of the IEEE Society on Social Implications of Technology, and Mark Haselkorn, past president of the IEEE Professional Communications Society. Their unedited statements are printed below. Election ballots will be distributed in late Summer 2000.

Statement for Loretta Arellano

Working my way up from chapter chair to Society President, I saw all aspects of a Society and its relationship to TAB and RAB. My regional positions through Chapter chair, Section and Council chair saw many aspects of regional activities and their relationships to Societies.

We all joined IEEE for different reasons — some for the technical information, others for the networking. But no matter where our IEEE experiences have been, we are ONE IEEE. RAB and TAB must work together in order for IEEE to remain a success. Some joint RAB and TAB activities exist but many more need to happen. It will take people with background in both RAB and TAB to fully understand all the issues to come up with programs and solutions for IEEE to grow.

I joined IEEE 15 years ago (as a student) for the technical information and have been exploring the vastness of IEEE ever since. There are so many wonderful people and programs, but my experience as a Div. VI Society President was by far the most rewarding IEEE experience. The Societies in Div. VI are broad in nature and span all other IEEE societies. In this regard, we have unique concerns and issues to deal with that sometimes get overlooked because we are not the “norm” society. I’d like to take this knowledge, as well as my experience in RAB, to use as Div. VI director.

Statement from Kenneth Foster

These are both challenging and difficult times for IEEE, and in particular for Division VI. While IEEE membership has been steadily increasing,

that of Division VI has been steadily declining. This trend must be reversed, by improving the attractiveness of Div. VI products and services to IEEE members at large, with particular attention to non-US members. On a larger scale, the IEEE is facing crucial issues on several fronts. It has enormous financial assets in intellectual property.

However, the business model for managing these assets is changing, with the shift to electronic publication and away from traditional print media. This will require large changes in the IEEE itself. We are already seeing these changes, in the form of stronger corporate management, and new emphasis on branding and other marketing issues.

There also seems to be increased risk adversiveness in corporate management. The real challenge is to manage the changes that the IEEE must undertake, without losing its soul as a volunteer organization. My chief contribution as Division VI Director will be to exercise responsible judgment in helping to govern IEEE, but also to serve as a means of communication with IEEE volunteers, who are and must remain the lifeblood of the IEEE.

Statement from Gerard H. (Gus) Gaynor

Being nominated to serve the members of the Division VI Societies - Education, Engineering Management, Professional Communications, Social Implications of Technology, and Reliability - and serve, as a member of IEEE’s Board of Directors is indeed an honor.

If elected, I ask for your active participation. We can enhance the progress

of each Division VI Society in Regions 1 through 10 by working together and promoting intersociety cooperation through collaborative discussions and events. The Division VI Societies represent the nucleus of professional development. Our competencies are essential for effectively implementing technology.

As a duly elected member to the IEEE Board of Directors, I will work diligently to:

- Assure that the career and professional needs of our Division VI Societies are responsibly addressed
- Promote professional development throughout IEEE as a major career need for the 21st Century engineer
- Focus on IEEE operations, fiscal discipline, member value, and communication
- Integrate the activities of RAB, TAB, IEEE-USA, and Staff programs
- Promote the needs of the practicing engineer without diminishing the needed leading edge contributions from the academic community

My career - from neophyte engineer to entrepreneur to engineering and technology executive at 3M - afforded many opportunities to make significant contributions as an engineer and as an engineering executive where innovation and technological and business leadership were not a choice but a requirement. I have and will continue to dedicate that same initiative to Division VI and IEEE. If elected, I ask for your active participation to further our members’ needs and the growth of Division VI Societies.

*Statement from
Mark P. Haselkorn*

IEEE is undergoing major changes that will be especially significant to Division VI. While traditionally serving engineers and computer scientists, IEEE is now seeking to also serve the full range of engineering activities (e.g. management, information design and development, quality control, and marketing). IEEE has "changed" its name — it no longer is "The Institute for Electrical and Electronics Engineers," just IEEE. Perhaps more significantly, at the board series in New Orleans the Technical Activities Board overwhelmingly approved a motion (which I initiated in the Strategic Planning Committee and presented to TAB) requesting the IEEE Board of Directors to assure that any applicant with a degree in an IT area or three or more years experi-

ence in the IT Industry be awarded full membership (in the past an affiliate category was used for many of these).

If the Board goes along (I believe it will) this constitutes a major opening up of IEEE membership to "non-traditional" areas of interest to Division VI. To build upon this action, the Technical Activities Board also approved my motion for a "top-to-top" Information Technology Initiative "Workshop" with the aim of bringing together leaders from the IT industry and IEEE to identify ways in which IEEE's resources can best be used to serve the IT industry and the interests and needs of its employees. I will be leading the organization of this workshop. I hope that you will support my efforts to assure that IEEE takes a broad view of the engineering enterprise and that it serves all its current and potential members equally and well. Thank you.

Congratulations to the Engineering Management Society Millennium Medal Recipients

by Dennis Bodson, EMS Executive Vice President

On behalf of Dr. Wade Shaw, President, Engineering Management Society (EMS), and the entire EMS Board of Governors, congratulations to the recipients of the IEEE Millennium Medal. The IEEE Millennium honors IEEE members for outstanding contributions in their respective areas.

The following individuals have been awarded the IEEE Millennium Medal by the Engineering Management Society for their outstanding contributions to Engineering and Technology Management:

L. K. Anderson
B. Michael Aucoin
Joseph H. Bellefeuille
Robert B. Bishop, Jr.
Dennis Bodson
Vivian A. Carr
Tariq S. Durrani
Gerard H. (Gus) Gaynor
Arthur Goldsmith

Thomas H. Grim
Dundar F. Kocaoglu
Seymour Krevsky
Lois S. Peters
M. F. Rodriguez-Perazza
A.H. Rubenstein
C. P. Rubenstein
Wade H. Shaw
Charles B. Stot
John F. Van Savage
Cinda S. Voegtli
William A. Wallace
David J. Wells
Paul A. Willis
E. A. Wolff

It is our intent to present as many of these medals as possible at the International Engineering Management Conference (IEMC 2000) in Albuquerque, NM during the period August 13-15, 2000. For those recipients who cannot attend, we will do our utmost to find a suitable presentation venue.

Panels

The panel topics making today's headlines and those that reflect traditional concerns of engineering and technology managers:

- Cyber Aggression
- Radical Innovation
- Technology and Ethics
- Management of Technology
- Entrepreneurship
- Globalization
- Process Management and Information Technology
- Positioning EMS for the Next Millennium
- Managing Transportation Technology
- Publishing Management and Technology Articles – The Editor's Point of View
- Managing the Software Development Life Cycle
- Updating the Technology Manager

Workshops

The workshops are scheduled for Sunday, August 13. IEMC 2000 presents a series of workshops dealing with the professional development side of engineering and technology management:

- Building Motivated Teams
- Teamwork: Projects and Popcorn
- Transitioning from Technical Professional to Manager
- Emotions in the Workplace
- Time Management
- Advanced Web Base Construction
- Process Improvement in Project Management
- Dynamic Management of the Technology Intense Enterprise.

The Fun Stuff

The organizers have done their best to see that the Conference will NOT be all work and no play! In addition to the opening and closing receptions we have arranged to hold the Conference Banquet at the Indian Pueblo Cultural Center in Albuquerque, with the theme "Discovering Native New Mexico".

The Indian Pueblo Cultural Center is owned and operated by the 19 Pueblos of New Mexico and is the richest resource for the study of America's first inhabitants in the Southwest.

Because New Mexico is a prime vacation destination we have expanded the Companion's program this year. Companions registering for this program will have a separate meeting room for their continental breakfasts, where they will be able to get together with a local hostess to plan activities. In addition, we have arranged for an optional "Escape to Santa Fe" day trip for those interested in the "City Different".

More details on IEMC-2000 are included in the Advance Program that will be mailed out to all EMS members. In addition, you can look for the most up-to-date information on the Conference web site,

<http://asm.unm.edu/mot/iemc2000.htm>.

Questions on registration details can be directed to Nikki Rokosz at IEEE Travel and Conference Management Services (732 981 3428; nrokosz@staff.ieee.org).

Questions regarding the program can be directed to the Conference Committee:

Lois Peters, general chair (peterl@rpi.edu)
 Larry Anderson, cochair (l.anderson@ieee.org)
 Sul Kasscieh, program cochair (kassicieh@unm.edu)
 Steve Walsh, program cochair (walsh@unm.edu)

Make sure that your summer plans include IEMC-2000 and the Land of Enchantment! To make this easy, we've included Conference and Hotel registration forms with this newsletter.

See you in Albuquerque!

CITY/STATE/ZIP/COUNTRY _____
 TELEPHONE _____ FAX _____
 E-MAIL ADDRESS _____
 GUEST/COMPANION NAME _____

IEEE MEMBER EMS MEMBER IEEE MEMBER NUMBER _____
 IEE MEMBER

AUTHOR Y/N

REGISTRATION FEES	Received On or Before July 1, 2000		Received After July 2, 2000		Total
	IEEE /IEE Member	Non-Member	IEEE/IEE Member	Non-Member	
Basic Conference Fees (Includes Admission to Technical Sessions, Opening and Closing Receptions, Continental Breakfast on Monday and Tuesday, Lunch on Monday and Tuesday and Printed Proceedings)	\$350	\$400	\$395	\$475	\$
Student/Life Member	\$95	\$95	\$125	\$125	\$
Guest/Companion Package (Includes Opening and Closing Receptions, Continental Breakfast on Monday and Tuesday)	\$85	\$85	\$85	\$85	\$
WORKSHOPS, SUNDAY, AUGUST 13, 2000					
MORNING SESSIONS					
AM1 - Advanced Web Based Construction	\$95	\$95	\$95	\$95	\$
AM2 - Process Improvement in Project Management	\$95	\$95	\$95	\$95	\$
AM3 - Building Motivated Teams	\$95	\$95	\$95	\$95	\$
AM4 - Transitioning from Technical Professional to Manager	\$95	\$95	\$95	\$95	\$
AFTERNOON SESSIONS					
PM1 - Dynamic Management of the Technology Intense Enterprise	\$95	\$95	\$95	\$95	\$
PM2 - Teamwork, Projects and Popcorn	\$95	\$95	\$95	\$95	\$
PM3 - Emotions in the Workplace: They can Make or Break You	\$95	\$95	\$95	\$95	\$
PM4 - Time Management	\$95	\$95	\$95	\$95	\$
ADDITIONAL OPTIONS			Number	Fee	Total
Sunday, August 13, 2000 - Additional Opening Reception Tickets **			# @	\$30	\$
Monday, August 14, 2000 - Discovering Native New Mexico - Banquet at Indian Pueblo Cultural Center			# @	\$50	\$
Monday, August 14, 2000 - Escape to Santa Fe Tour			# @	\$48	\$
Tuesday, August 15, 2000 - Additional Closing Reception Tickets **			# @	\$30	\$
Proceedings (Additional Copy) Hard Copy			# @	\$50	\$
				Add \$20 with wire transfer	\$
				Total Remittance of All Events (Must be in US Dollars)	\$

****Note: Extra tickets are needed only for those individuals who are not registered for either the Conference or the Companion Package**.**

INSTRUCTIONS FOR PAYMENT OF REGISTRATION FEES

METHOD OF PAYMENT:

- Visa Master Card American Express Diners Club

Card Number

Exp. Date

Name as it Appears on Credit Card

Authorized Signature _____

MAKE CHECKS (drawn on a US bank in US Dollars) PAYABLE TO: 2000 IEEE EMS CONFERENCE

WIRE TRANSFERS - The following information is required regarding wire transfers:

Conference Bank Name: First Bank Boston, Massachusetts USA
Bank Account #: 845 900 1469, Bank Account Name: IEEE Travel Services ABA#: L011 000 138

CANCELLATION POLICY: Please note that after July 15, 2000 your Advance Registration Fee and all other fees are not refundable. Full refunds less a \$50.00 handling fee will be granted for cancellations received in writing by July 15, 2000. The letter to the Symposium Registrar (address below) requesting the refund should state the preregistrant's name and to whom the check should be made payable. All refunds will be processed after the Symposium. Refund requests received after July 15, 2000 will not be honored.

MAIL COMPLETED REGISTRATION FORM AND FEES TO:
 REGISTRAR, 2000 IEEE EMS CONFERENCE, c/o IEEE Conference Management Services
 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331, USA
 Tel: (732) 562-6828 Fax: (732) 465-6447 E-Mail: EMS2000reg@ieee.org

2000 IEEE EMS CONFERENCE AND ANNUAL MEETING
 August 13-15, 2000, Albuquerque Marriott, Albuquerque, New Mexico
HOTEL RESERVATION FORM

Please type or print information in capital letters as you wish it to appear on your hotel reservation. A separate form must be completed for EACH ROOM required.

NAME

COMPANY

STREET ADDRESS

CITY/STATE/ZIP/COUNTRY

TELEPHONE _____ FAX _____

E-MAIL ADDRESS

ALBUQUERQUE MARRIOTT, 2101 Louisiana Boulevard NE, Albuquerque, NM 87110 USA
 Phone 505-881-6800, or 1-800-228-9290
 \$109.00 single/double occupancy; \$109.00 triple occupancy \$109.00 quad occupancy
 All above mentioned rates, will be subject to any state and city tax in effect at the time of your stay.
 Space is limited and reservations will be made available on a first come, first serve basis.

ARRIVAL AND DEPARTURE INFORMATION

Arrival Date: _____ Approximate Arrival Time: _____ AM/PM (please circle) Departure Date: _____

SPECIAL REQUESTS - Can not be guaranteed; however, we will make every effort to accommodate you.

Smoking	Non-Smoking	One Bed	Two Beds	Other/Specify: _____
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OCCUPANTS - Each person, in addition to the name mentioned above, who will be in this room

Occupant 1:	Occupant 2:
Occupant 3:	Occupant 4:

INSTRUCTIONS FOR PAYMENT OF HOTEL RESERVATION FEES

METHOD OF PAYMENT:

Please Note: In order to process your hotel reservation, you MUST include credit card information or one night's deposit with this form. If you do not supply this information, we will not be able to process your reservation with the hotel.

Visa	Master Card	American Express	Diners Club
_____	_____	_____	_____
Card Number			Exp. Date
Name as it Appears on Credit Card _____			
Authorized Signature _____			

MAKE CHECKS (drawn on a US bank in US Dollars) PAYABLE TO: Albuquerque Marriott

IMPORTANT INFORMATION:

RESERVATIONS: All reservations for the hotels listed above are being coordinated by the hotel directly. To reserve a room, use the above hotel reservation form. All reservation forms **MUST BE RECEIVED BY THE HOTEL NO LATER THAN JULY 21, 2000.**

CHANGES IN RESERVATIONS: All changes of arrival, departure, type of room or names of persons should be made directly with the Albuquerque Marriott

BILLING PROCEDURES: Upon arrival at the hotel, the guest will be asked to present method of payment for overnight accommodations, as well as, incidental charges such as room service, telephone, etc.

RESERVATION CONFIRMATION: A written confirmation will be sent by the Albuquerque Marriott. Please allow fourteen days for the Albuquerque Marriott to process your reservation request and mail a confirmation to you.

CANCELLATION POLICY: Please refer to your confirmation letter, as each hotel varies in their policies.

MAIL COMPLETED HOTEL RESERVATION FORM AND FEES TO:

ALBUQUERQUE MARRIOTT
2101 Louisiana Boulevard NE, Albuquerque, NM 87110 USA
Phone 505-881-6800, or 1-800-228-9290

Engineering Management Society History, PART 1: Getting Started

Paul A. Willis, PE, EMS Vice President Education

“There is much more opportunity than there are people to see it.”

— Thomas A. Edison

“Corporate research has to create more than new products; it must build the prototype of the continuously innovating company.”

— John Seely Brown,
Xerox PARC

The current IEEE Engineering Management Society began as the IRE Professional Group on Engineering Management (PGEM) at an organizational meeting in June 1951. Ralph I. Cole, then of Melpar Corp. chaired the organizing committee and served on the IRE PGEM Administrative Committee from 1951 through 1959, and on the Board of Governors of the IEEE EMS in 1989. Ralph was named an Honorary Member in 1994 and died in 1996.

Ferdinand Schor, then Chief Engineer of the Hallicrafters Company, Tom C. Rives, Brigadier General, United States Army, Retired, then of General Electric, C. J. Breitwieser of Lear Corp., and A. D. Arsem were some other members of the Organizing Committee. As we discover more early documents, we will supply the names of other Organizing Committee members.

Many of the members of the Organizing Committee remained active and became officers of the PGEM over the next few years.

The first official meeting of the IRE-chartered PGEM was apparently March 2, 1952. The initial Officers were:

Chairman:	Tom Rives
Vice-Chairman	C.J.Breitwieser
Secretary/Treasurer	A. D. Arsem

The first three issues of the Transactions of the IRE PGEM were labeled volumes PGEM 1, 2, and 3; they were published in February and November 1954, and March 1955.

Volume PGEM 1 contained seven papers, including two that had been given at the National Electronics Conference in Chicago on September 30, 1953 and one that was an excerpt from a Report titled “Special Committee on R & D Facilities, Budget, and Personnel” of the Scientific Advisory Board to the Chief of Staff, United States Air Force. This Report was the only paper with a reference (to Methods of Operations Research by Morse and Kimball).

The seven papers covered advising engineers what they must do to join the ranks

of modern management, how important Quality Control is in engineering design and production, an initial thrust at applying Information Theory to Organization and System Engineering, and a definition of the Role of Military Electronics R & D. Authors were C.G. Cambridge, T.C. Rives, Harold Goldberg, Harold G. Purinton, Charles E. Ellis, Jerome Rothstein, and Herbert Sherman.

Issue PGEM 2 contained seven papers, and PGEM 3 contained 5. In 1955, the Volume numbering scheme changed, so 1956 issues were “Vol. EM-3, No 1, January 1956” and so forth. The main thrust of the papers continued to be Engineering Management, Engineering Managers and why you should learn to be one, and advice on how to become an Engineering Manager. I am struck by their adjectival character; the first “model” offered is in Vol. EM-3, No. 3, July 1956 titled “Weapon System Cost Analysis” by D. Novick.

If you were here then, recall the environment: We are a few years past the Korean War, the economy is uncertain, and many engineers are dependent on Department of Defense Contract funding. The difference in salary between engineers working in the defense industries and those in commercial firms woos many to remain in Weapons System Design. How about you? I was an Engineer on the B-58 Hustler Bomber’s Bombing/Navigational System.

As we locate more early documents of the EMS, I will correct any misinformation or misinterpretations. In the meantime I’ll continue searching the records to reconcile the EMS history.

There are many of you who have participated in EMS over the years. If you personally can contribute any information or advise us on any past members who might know about the early days of EMS please contact me. I’ll be happy to hear from anyone with EMS tales of those early days. My e-mail address is <p.willis@ieee.org>.

From the editor

by Gus Gaynor

For those of us involved in engineering and technology management is there anything more important than innovation? I admit to a bias for innovation probably because I've had an opportunity to spend the major part of my career at 3M where innovation is an expectation and the environment exists to support it.

Innovation is not just about generating ideas — it's about doing something with a specific idea. I suggest that Innovation = Invention + Commercialization. For internal administrative activities the word *Implementation* can be substituted for *Commercialization*. Innovation involves *doing*.

Few innovations spring from a flash of genius (Eureka). Some innovations occur as a result of serendipity coupled with observation, but most result from a continuous search for innovation opportunities coupled with just plain hard work. Innovation cannot be a one-time event — it's a way of life — it's an attitude.

So, how do we as managers operating in many different environments and under many different organizational constructs attract more engineers to become the innovation leaders?

Managers need to understand the importance of innovation and declare it as an expectation. Engineers can no longer be satisfied with waiting for the next assignment. If managers are not promoting and rewarding innovation, none will occur. If managers themselves are not innovating none will occur. If managers do not create an environment that fosters innovation none will occur. Innovation requires that managers put on the INNOVATION hat. They're the spark plugs of the innovation engine.

Peter Drucker over the years has provided insight into the innovation process. He suggests seven sources for innovative opportunity (paraphrased):

- **Unexpected events** — the unexpected successes, failures, or events within or outside the organization
- **Incongruities and inconsistencies** — the disconnects between assumptions and reality
- **Process needs** — there's a job to be done — improve the process or supply the missing link
- **Changes in industry and market structure** — opportunities for innovation — we need to recognize them
- **Demographics** — changes in the population distribution by size, geography, employee competence, age distribution, civil unrest, international conflict, income level, and more
- **Changes in perception, mood, and meaning** — perception comes from where we position ourselves — culture influences mood — meaning comes from our value system
- **New knowledge, both scientific and nonscientific** — new knowledge presents new opportunities

Drucker's seven sources for innovation lay the groundwork for stimulating observation of the changes taking place in the business environment. At the same time managers need to develop an environment that utilizes these seven sources of innovation as building blocks for introducing new products and services.

Competence in using these sources of innovation does not come about without education. Engineers need to be educated in the processes of observation. They need to be sensitive to the envi-

ronment in which they function. That means that engineers must become more than technology centered — they must become business centered.

Managers can develop an environment that stimulates innovation by:

- Educating engineers to be problem finders
- Understanding the complexity and limitations of the organization
- Determining where the organization lies on the innovation continuum
- Understanding how the organization got to where it is
- Knowing the key players at all levels — their competencies or lack thereof
- Communicating and supporting a realistic vision with a realistic operational plan
- Promoting professional skills development
- Encouraging new ways of accomplishing tasks
- Encouraging open communication
- Educating employees about the business
- Building a sense of excitement and collegiality
- Investing in the future

There are no ten easy lessons for developing an environment that fosters innovation. The proposed suggestions are only the beginning. Innovation begins with people — managers who are competent in the management discipline and associates competent in their discipline who work collegially to develop an environment of disciplined freedom.

IEMC-2000 <http://asm.unm.edu/mot/iemc2000.htm>

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